

National Kidney and Urologic Diseases Information Clearinghouse

The Kidney Diseases Dictionary



U.S. Department
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This dictionary defines words that are often used when people talk or write about kidney diseases. It is designed for people who have kidney diseases and their families and friends.

The words are listed in alphabetical order. Some words have many meanings; only those meanings that relate to kidney diseases are included. Words that appear in ***bold italic*** are defined elsewhere in the dictionary. A term will refer the reader to another definition only when the second definition gives additional information about a topic that is directly related to the first term.

This information is not a substitute for a visit to your doctor. Talk to a health professional if you have a kidney problem.



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acute (uh-KYOOT): Acute often means urgent. An acute disease happens suddenly. It lasts a short time. Acute is the opposite of *chronic*, or long lasting.

acute renal (REE-nul) failure: Sudden and temporary loss of *kidney* function. (See also *chronic kidney disease*.)

acute tubular (TOO-byoo-lur) necrosis (neh-KRO-sis) (ATN): A severe form of *acute renal failure* that develops in people with severe illnesses like infections or with low blood pressure. Patients may need *dialysis*. *Kidney* function often improves if the underlying disease is successfully treated.

albuminuria (AL-byoo-mih-NOO-ree-uh): More than normal amounts of a protein called albumin in the *urine*. Albuminuria may be a sign of *kidney* disease.

allograft (AL-oh-graft): An organ or tissue *transplant* from one human to another.

Alport syndrome (AL-port SIN-drome): An inherited condition that results in *kidney* disease. It generally develops during early childhood and is more serious in boys than in girls. The condition can lead to *end-stage renal disease*,

as well as hearing and vision problems. The common symptoms of this condition are *chronic* blood and protein in the *urine*.

amyloidosis (AM-ih-loy-DOH-sis): A condition in which a protein-like material builds up in one or more organs. This material cannot be broken down and interferes with the normal function of that organ. In *kidneys*, amyloidosis can lead to *proteinuria*, *nephrotic syndrome*, and *kidney failure*.

analgesic (AN-ul-JEE-zik)-associated kidney disease: Loss of *kidney* function that results from long-term use of analgesic (pain-relieving) medications. Analgesics that combine aspirin and acetaminophen are most dangerous to the kidneys.

anemia (uh-NEE-mee-uh): The condition of having too few red blood cells. Healthy red blood cells carry oxygen throughout the body. If the blood is low on red blood cells, the body does not get enough oxygen. People with anemia may be tired and pale and may feel their heartbeat change. Anemia is common in people with *chronic kidney disease* or those on *dialysis*. (See also *erythropoietin*.)

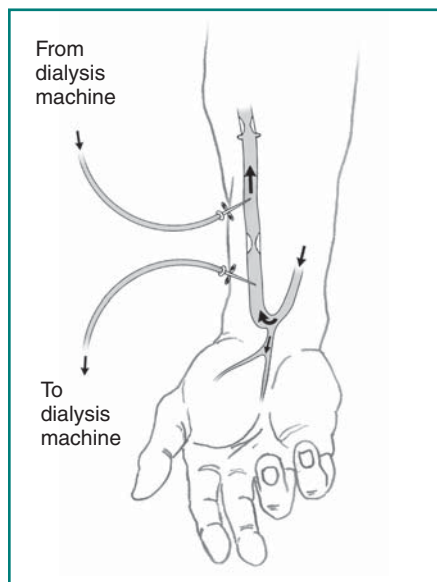
A-C

antidiuretic (AN-tee-DY-uh-RET-ik)

hormone (ADH): A natural body chemical that slows down the *urine* flow. Some children who wet their beds regularly may lack normal amounts of antidiuretic hormone.

anuria (uh-NYOOR-ee-uh): A condition in which the person stops making *urine*.

arteriovenous (ar-TEER-ee-oh-VEE-nus) **(AV) fistula** (FIST-yoo-luh): Surgical connection of an artery directly to a vein, usually in the forearm, created in patients who will need hemodialysis



Arteriovenous Fistula

(see *dialysis*). The AV fistula causes the vein to grow thicker, allowing the repeated needle insertions required for hemodialysis.

autoimmune (AW-toh-ih-MYOON)

disease: Any disorder in which the body is attacked by its own *immune system*. Examples are *Goodpasture syndrome* and *lupus erythematosus* (see *lupus nephritis*).

biopsy (BY-op-see): A procedure in which a tiny piece of a body part, such as the *kidney* or *bladder*, is removed for examination under a microscope.

bladder (BLAD-ur): The balloon-shaped organ inside the *pelvis* that holds *urine*.

blood urea (yoo-REE-uh) **nitrogen** (NY-truh-jen) **(BUN):** A waste product in the blood that comes from the breakdown of food protein. The *kidneys* filter blood to remove urea. As kidney function decreases, the BUN level increases.

calcium (KAL-see-um): A mineral that the body needs for strong bones and teeth. Calcium may form stones in the *kidney*.

chronic (KRAH-nik): Lasting a long time. Chronic diseases develop slowly. *Chronic kidney disease* may develop over many years and lead to *end-stage renal disease*.

chronic kidney disease (CKD): Any condition that causes reduced kidney function over a period of time. CKD is present when a patient's *glomerular filtration rate* remains below 60 mL/min/1.73 m² for more than 3 months.

congenital (kun-JEN-ih-tul) **nephrotic** (nef-RAH-tik) **syndrome**: A genetic *kidney* disease that develops before birth or in the first few months of life. Congenital nephrotic syndrome usually leads to *end-stage renal disease* and the need for *dialysis* or a kidney *transplant* by the second or third year of life.

creatinine (kree-AT-ih-nin): A waste product from meat protein in the diet and from the muscles of the body. Creatinine is removed from blood by the *kidneys*; as kidney disease progresses, the level of creatinine in the blood increases.

creatinine clearance: A test that measures how efficiently the *kidneys* remove *creatinine* and other wastes from the blood. Low creatinine clearance indicates impaired kidney function.

cyst (SIST): An abnormal sac containing gas, fluid, or a semisolid material. Cysts may form in *kidneys* or in other parts of the body. (See also *renal cysts*.)

cystine (SIS-teen): An amino acid found in blood and urine. Amino acids are building blocks of protein. (See also *cystine stone* and *cystinuria*.)

cystine stone: A rare form of *kidney stone* consisting of the amino acid *cystine*.

cystinuria (SIS-tih-NOO-ree-uh): A condition in which *urine* contains high levels of the amino acid *cystine*. If cystine does not dissolve in the urine, it can build up to form *kidney stones*.

cystitis (sis-TY-tis): Inflammation of the *bladder*, causing pain and a burning feeling in the *pelvis* or *urethra*.

cystoscope (SIS-tuh-skope): A tool for examining the *bladder*. The procedure is called cystoscopy (sis-TAH-skuh-pee).

D

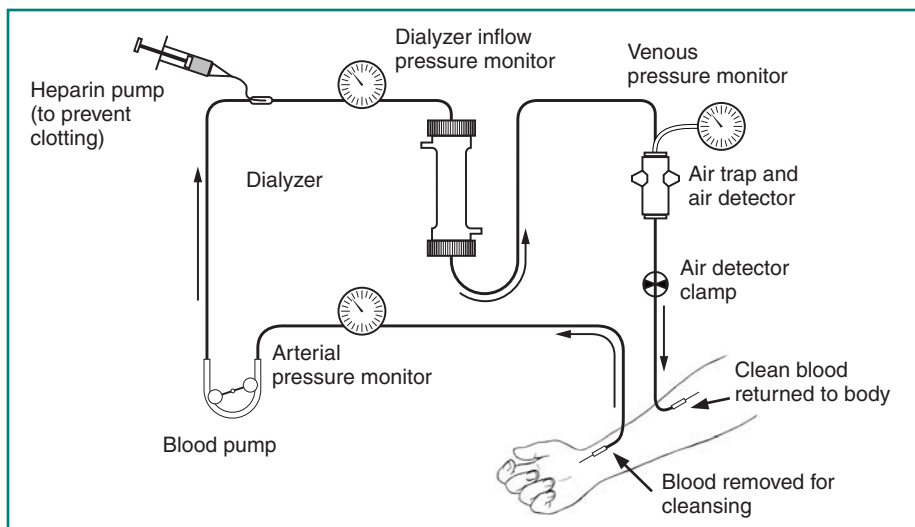
diabetes (dy-uh-BEE-teez) **insipidus** (in-SIP-ih-dus): A condition characterized by frequent and heavy urination, excessive thirst, and an overall feeling of weakness. This condition may be caused by a defect in the pituitary gland or in the **kidney**. In diabetes insipidus, blood glucose levels are normal. (See also **nephrogenic diabetes insipidus**.)

diabetes (dy-uh-BEE-teez) **mellitus** (MELL-ih-tus): A condition characterized by high blood glucose (sugar) resulting from the body's inability to use glucose efficiently. In type 1 diabetes, the pancreas makes little or no insulin;

in type 2 diabetes, the body is resistant to the effects of available insulin.

dialysis (dy-AL-ih-sis): The process of cleaning wastes from the blood artificially. This job is normally done by the **kidneys**. If the kidneys fail, the blood must be cleaned artificially with special equipment. The two major forms of dialysis are hemodialysis and peritoneal dialysis.

- **hemodialysis** (HEE-moh-dy-AL-ih-sis): The use of a machine to clean wastes from the blood after the **kidneys** have failed. The blood travels through



Hemodialysis

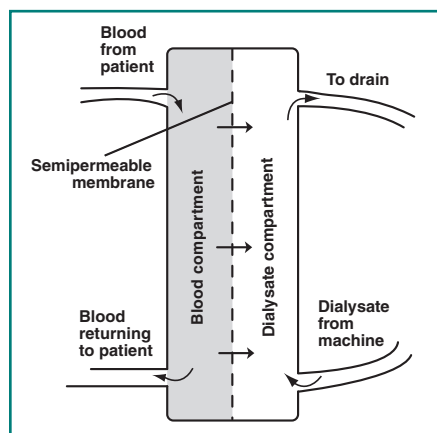
tubes to a *dialyzer*, which removes wastes and extra fluid. The cleaned blood then flows through another set of tubes back into the body.

- **peritoneal** (PEH-rih-tuh-NEE-ul) **dialysis**: Cleaning the blood by using the lining of the belly (abdomen) as a filter. A cleansing solution, called *dialysis solution*, is drained from a bag into the belly. Fluids and wastes flow through the lining of the belly and remain “trapped” in the dialysis solution. The solution is then drained from the belly, removing the extra fluids and wastes from the body. There are three types of peritoneal dialysis:
 - **continuous ambulatory** (AM-byoo-luh-TOH-ree) **peritoneal dialysis (CAPD)**: The most common type of peritoneal dialysis. It needs no machine. With CAPD, the blood is always being cleaned. The *dialysis solution* passes from a plastic bag through the catheter and into the abdomen. The dialysis solution stays in the abdomen with the catheter sealed. After several hours, the person using CAPD drains the solution back into a disposable bag. Then the person refills the abdomen with fresh solution through the same catheter, to begin the cleaning process again.
 - **continuous cycling peritoneal dialysis (CCPD)**: A form of peritoneal dialysis that uses a machine. This machine automatically fills and drains the *dialysis solution* from the abdomen. A typical CCPD schedule involves three to five *exchanges* during the night while the person sleeps. During the day, the person using CCPD performs one exchange with a *dwell time* that lasts the entire day.
 - **nocturnal** (nok-TURN-ul) **intermittent** (IN-ter-MIT-unt) **peritoneal dialysis (NIPD)**: A machine-aided form of peritoneal dialysis. NIPD differs from CCPD in that six or more *exchanges* take place during the night, and the NIPD patient does not perform an exchange during the day.

D-E

dialysis solution: A cleansing liquid used in the two major forms of *dialysis*—hemodialysis and peritoneal dialysis. Dialysis solution contains dextrose (a sugar) and other chemicals similar to those in the body. Dextrose draws wastes and extra fluid from the body into the dialysis solution.

dialyzer (DY-uh-LY-zur): A part of the hemodialysis machine. (See hemodialysis under *dialysis*.) The dialyzer has two sections separated by a *membrane*. One section holds *dialysis solution*. The other holds the patient's blood.



Dialyzer

dwelt time: In peritoneal *dialysis*, the amount of time a bag of *dialysis solution* remains in the patient's abdominal cavity during an *exchange*.

edema (eh-DEE-muh): Swelling caused by too much fluid in the body.

electrolytes (ee-LEK-troh-lites): Chemicals in the body fluids that result from the breakdown of salts, including sodium, potassium, magnesium, and chloride. The *kidneys* control the amount of electrolytes in the body. When the kidneys fail, electrolytes get out of balance, causing potentially serious health problems. *Dialysis* can correct this problem.

end-stage renal (REE-nul) disease (ESRD): Total chronic *kidney failure*. When the kidneys fail, the body retains fluid and harmful wastes build up. A person with ESRD needs treatment to replace the work of the failed kidneys.

erythropoietin (eh-RITH-roh-POY-uh-tin): A *hormone* made by the *kidneys* to help form red blood cells. Lack of this hormone may lead to *anemia*.

ESRD: See *end-stage renal disease*.

ESWL: See *extracorporeal shockwave lithotripsy*.

E-G

exchange: A cycle in peritoneal *dialysis* in which the patient fills the abdominal cavity with *dialysis solution*, carries it for a specified *dwell time*, and then empties it from the abdomen in preparation for a fresh bag of dialysis solution.

extracorporeal (EKS-truh-kor-POR-ee-ul) **shockwave lithotripsy** (LITH-oh-TRIP-see) (**ESWL**): A nonsurgical procedure using shock waves to break up *kidney stones*.

fistula (FIST-yoo-lah): See *arteriovenous fistula*.

glomerular (gloh-MEHR-yoo-ler) **filtration rate (GFR)**: A calculation of how efficiently the *kidneys* are filtering wastes from the blood. A traditional GFR calculation requires an injection into the bloodstream of a fluid that is later measured in a 24-hour *urine* collection. A modified GFR calculation requires only that the *creatinine* in a blood sample be measured. Each laboratory has its own normal range for measurements. Generally, the normal range for men is 97 to 137 mL/min/1.73 m² of body surface area. The normal range for women is 88 to 128 mL/min/1.73 m².

glomeruli (gloh-MEHR-yoo-lie): Plural of *glomerulus*.

glomerulonephritis (gloh-MEHR-yoo-loh-nef-RY-tis): Inflammation of the *glomeruli*. Most often, it is caused by an *autoimmune disease*, but it can also result from infection.

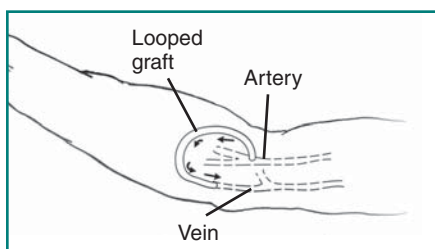
glomerulosclerosis (gloh-MEHR-yoo-loh-skleh-ROH-sis): Scarring of the *glomeruli*. It may result from *diabetes mellitus* (diabetic glomerulosclerosis) or from deposits in parts of the glomeruli (focal segmental glomerulosclerosis). The most common signs of glomerulosclerosis are *proteinuria* and *chronic kidney disease*.

glomerulus (gloh-MEHR-yoo-lus): A tiny set of looping blood vessels in the *nephron* where blood is filtered in the *kidney*.

Goodpasture syndrome: An uncommon disease that usually includes bleeding from the lungs, coughing up of blood, and inflammation of the *kidneys* that can lead to *kidney failure*. This condition is an *autoimmune disease*.

G-H

graft: In hemodialysis (see *dialysis*), a vascular access surgically created using a synthetic tube to connect an artery to a vein. In transplantation (see *transplant*), a graft is the transplanted organ or tissue.



Graft

hematocrit (hee-MAT-uh-krit): A measure that tells what portion of a blood sample consists of red blood cells. Low hematocrit suggests *anemia* or massive blood loss.

hematuria (HEE-muh-TOOR-ee-uh): Blood in the *urine*, which can be a sign of a *kidney stone*, *glomerulonephritis*, or other kidney problem.

hemodialysis: See *dialysis*.

hemolytic (HEE-moh-LIT-ik) **uremic** (yoo-REE-mik) **syndrome** (SIN-drome) (**HUS**): A disease that affects the blood and blood vessels. It destroys red blood cells, cells that cause the blood to clot, and the lining of blood vessels. HUS is often caused by

the *Escherichia coli* bacterium in contaminated food. People with HUS may develop *acute renal failure*.

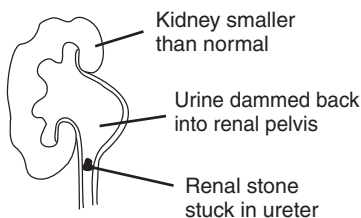
hormone (HOR-mone): A natural chemical produced in one part of the body and released into the blood to trigger or regulate particular functions of the body. The *kidney* releases three hormones: *erythropoietin*, *renin*, and an active form of vitamin D that helps regulate *calcium* for bones.

hydronephrosis (HY-droh-nef-ROH-sis): Swelling of the top of the *ureter*, usually because something is blocking the *urine* from flowing into or out of the *bladder*.

Healthy Kidney



Unhealthy Kidney



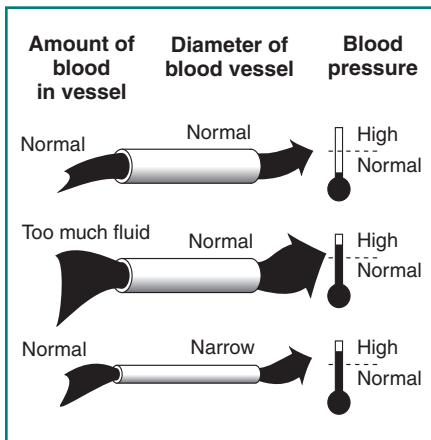
Hydronephrosis

H-I

hypercalciuria (HY-per-kal-see-YOO-ree-uh): Abnormally large amounts of *calcium* in the *urine*.

hyperoxaluria (HY-per-ox-uh-LOO-ree-uh): Unusually large amounts of *oxalate* in the *urine*, leading to *kidney stones*.

hypertension (HY-per-TEN-shun): High blood pressure, which can be caused either by too much fluid in the blood vessels or by narrowing of the blood vessels.



Hypertension

IgA nephropathy (nef-RAHP-uh-thee): A *kidney* disorder caused by deposits of the protein immunoglobulin A (IgA) inside the *glomeruli* (filters) within the

kidney. The IgA protein damages the *glomeruli*, leading to blood and protein in the *urine*, to swelling in the hands and feet, and sometimes to *kidney failure*.

immune (im-YOON) **system**: The body's system for protecting itself from viruses and bacteria or any "foreign" substances.

immunosuppressant (im-YOON-oh-suh-PRESS-unt): A drug given to suppress the natural responses of the body's *immune system*. Immunosuppressants are given to *transplant* patients to prevent organ rejection and to patients with *autoimmune diseases* like lupus.

interstitial (IN-ter-STISH-ul) **nephritis** (nef-RY-tis): Inflammation of the *kidney* cells that are not part of the fluid-collecting units, a condition that can lead to *acute renal failure* or *chronic kidney disease*.

intravenous (IN-truh-VEE-nus) **pyelogram** (PY-loh-gram): An x ray of the *urinary tract*. A dye is injected to make the *kidneys*, *ureters*, and *bladder* visible on the x ray and show any blockage in the urinary tract.

K-M

kidney (KID-nee): One of the two bean-shaped organs that filter wastes from the blood. The kidneys are located near the middle of the back. They create *urine*, which is delivered to the *bladder* through tubes called *ureters*.

kidney failure: Loss of *kidney* function. (See also *end-stage renal disease*, *acute renal failure*, and *chronic kidney disease*.)

kidney stone: A stone that develops from crystals that form in *urine* and build up on the inner surfaces of the *kidney*, in the *renal pelvis*, or in the *ureters*.

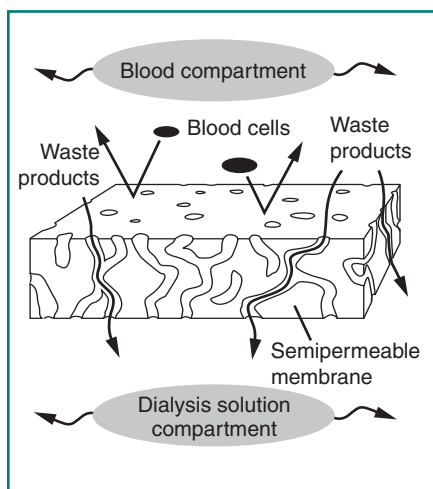
Kt/V (kay-tee over vee): A measurement of *dialysis* dose. The measurement takes into account the efficiency of the *dialyzer*, the treatment time, and the total volume of *urea* in the body. See also *URR*.

lithotripsy (LITH-oh-TRIP-see): A method of breaking up *kidney* stones using shock waves or other means.

lupus (LOO-pus) **nephritis** (nef-RY-tis): Inflammation of the *kidneys* caused by an *autoimmune disease* called systemic lupus

erythematosus (eh-rih-theh-mah-TOH-sis). The condition can cause *hematuria* and *proteinuria*, and it may progress to *end-stage renal disease*.

membrane (MEM-brane): A thin sheet or layer of tissue that lines a cavity or separates two parts of the body. A membrane can act as a filter, allowing some particles to pass from one part of the body to another while keeping others where they are. The membrane in a *dialyzer* filters waste products from the blood.



Dialyzer Membrane

M-O

membranoproliferative (MEM-bray-no-pro-LIF-er-uh-tiv)
glomerulonephritis (gloh-MEHR-yoo-loh-nef-RY-tis): A disease that occurs primarily in children and young adults. Over time, inflammation leads to scarring in the *glomeruli*, causing *proteinuria*, *hematuria*, and sometimes *chronic kidney disease* or *end-stage renal disease*.

membranous nephropathy (neh-FROP-uh-thee): A disorder that hinders the *kidneys*' ability to filter wastes from the blood because of harmful deposits on the glomerular membrane. Some cases of membranous nephropathy develop after an *autoimmune disease* or malignancy, but most develop without a known cause.

nephrectomy (nef-REK-tuh-mee): Surgical removal of a *kidney*.

nephrogenic (NEF-roh-JEN-ik)
diabetes (DY-uh-BEE-teez)
insipidus (in-SIP-ih-dus): Constant thirst and frequent urination because the *kidney* tubules cannot respond to *antidiuretic hormone*. The result is an increase in *urine* formation and excessive urine flow.

nephrolithiasis (NEF-roh-lih-THY-uh-sis): See *kidney stones*.

nephrologist (nef-RAHL-oh-jist): A doctor who treats patients with *kidney* problems or *hypertension*.

nephron (NEF-rahn): A tiny part of the *kidneys*. Each kidney is made up of about 1 million nephrons, which are the working units of the kidneys, removing wastes and extra fluids from the blood.

nephropathy (neh-FROP-uh-thee): Any disease of the *kidney*.

nephrotic (nef-RAH-tik) **syndrome**: A collection of symptoms that indicate *kidney* damage. Symptoms include high levels of protein in the *urine*, lack of protein in the blood, and high blood cholesterol.

nuclear (NEW-klee-ur) **scan**: A test of the structure, blood flow, and function of the *kidneys*. The doctor injects a mildly radioactive solution into an arm vein and uses x rays to monitor its progress through the kidneys.

oxalate (AHK-suh-late): A chemical that combines with *calcium* in *urine* to form the most common type of *kidney stone* (calcium oxalate stone).

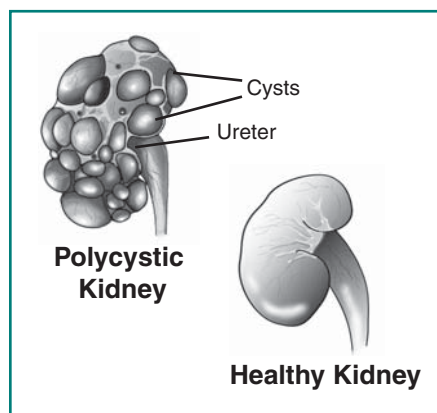
P-R

pelvis (PELL-vis): The bowl-shaped bone that supports the spine and holds up the digestive, urinary, and reproductive organs. The legs connect to the body at the pelvis.

percutaneous (PER-kyoo-TAY-nee-us) **nephrolithotomy** (NEF-roh-lih-THAH-tuh-mee): A method for removing **kidney stones** via keyhole surgery through the back.

peritoneal dialysis: See *dialysis*.

polycystic (PAHL-ee-SIS-tik) **kidney disease (PKD)**: An inherited disorder characterized by many grape-like clusters of fluid-filled cysts that make both **kidneys** larger over time. These cysts take over and destroy working kidney tissue. PKD may cause *chronic kidney disease* and *end-stage renal disease*.



proteinuria (PRO-tee-NOOR-ee-uh): A condition in which the **urine** contains large amounts of protein, a sign that the **kidneys** are not functioning properly.

pyelonephritis (PY-loh-nef-RY-tis): An infection of the **kidneys**, usually caused by a germ that has traveled up through the **urethra**, **bladder**, and **ureters** from outside the body.

renal (REE-nul): Of the **kidneys**. A renal disease is a disease of the kidneys. Renal failure means the kidneys have stopped working properly.

renal agenesis (ay-JEN-eh-sis): The absence or severe malformation of one or both **kidneys**.

renal cell carcinoma (KAR-sih-NOH-mah): A type of **kidney cancer**.

renal cysts (SISTS): Abnormal fluid-filled sacs in the **kidney** that range in size from microscopic to much larger. Many simple cysts are harmless, while other types can seriously damage the kidneys.

R-U

renal osteodystrophy (AH-stee-oh-DIS-truh-fee): Weak bones caused by poorly working *kidneys*. Renal osteodystrophy is a common problem for people on *dialysis* who have high phosphate levels or insufficient vitamin D supplementation.

renal pelvis (PELL-vis): The basin into which the *urine* formed by the *kidneys* is excreted before it travels to the ureters and bladder.

renal tubular (TOOB-yoo-lur) **acidosis** (ASS-ih-DOH-sis): A defect in the *kidneys* that hinders their normal excretion of acids. Failure to excrete acids can lead to weak bones, *kidney stones*, and poor growth in children.

renal vein thrombosis (throm-BOH-sis): Blood clots in the vessel that carries blood away from the *kidney*. This can occur in people with the *nephrotic syndrome*.

renin (REE-nin): A *hormone* made by the *kidneys* that helps regulate the volume of fluid in the body and blood pressure.

struvite (STROO-vite) **stone**: A type of *kidney stone* caused by infection.

transplant (TRANZ-plant):

Replacement of a diseased organ with a healthy one. A *kidney* transplant may come from a living donor, usually a relative, or from someone who has just died.

ultrasound: A technique that bounces safe, painless sound waves off organs to create an image of their structure.

urea (yoo-REE-uh): A waste product found in the blood and caused by the normal breakdown of protein in the liver. Urea is normally removed from the blood by the *kidneys* and then excreted in the *urine*. Urea accumulates in the body of people with *kidney failure*.

uremia (yoo-REE-mee-uh): The illness associated with the buildup of *urea* in the blood because the *kidneys* are not working effectively. Symptoms include nausea, vomiting, loss of appetite, weakness, and mental confusion.

ureteroscope (yoo-REE-tur-uh-scope): A tool for examining the *bladder* and *ureters* and for removing *kidney stones* through the *urethra*. The procedure is called ureteroscopy (yoo-ree-tur-AH-skoh-pee).

U-W

ureters (YOOR-uh-turs): Tubes that carry *urine* from the *kidneys* to the *bladder*.

urethra (yoo-REE-thrah): The tube that carries *urine* from the *bladder* to the outside of the body.

uric (YOOR-ik) **acid stone**: A *kidney stone* that may result from a diet high in animal protein. When the body breaks down this protein, uric acid levels rise and can form stones.

urinalysis (yoor-in-AL-ih-sis): A test of a urine sample that can reveal many problems of the *urinary tract* and other body systems. The sample may be observed for color, cloudiness, concentration; signs of drug use; chemical composition, including glucose; the presence of protein, blood cells, or germs; or other signs of disease.

urinary (YOOR-ih-NEHR-ee) **tract**: The system that takes wastes from the blood and carries them out of the body in the form of *urine*. The urinary tract includes the *kidneys*, *renal pelvises*, *ureters*, *bladder*, and *urethra*.

urinary tract infection (UTI): An illness caused by harmful bacteria growing in the *urinary tract*.

urate (YOOR-ih-nate): To release *urine* from the *bladder* to the outside.

urine (YOOR-in): Liquid waste product filtered from the blood by the *kidneys*, stored in the *bladder*, and expelled from the body through the *urethra* by the act of *voiding* or *urinating*.

urolithiasis (YOOR-oh-lih-THY-uh-sis): Stones in the *urinary tract*.

URR (urea reduction ratio): A blood test that compares the amount of *blood urea nitrogen* before and after *dialysis* to measure the effectiveness of the dialysis dose.

vasculitis (VAS-kyoo-LY-tis): Inflammation of the blood vessel walls. This can cause rash and disease in multiple organs of the body, including the *kidneys*.

vesicoureteral (VESS-ih-koh-yoo-REE-ter-ul) **reflux**: An abnormal condition in which *urine* backs up into the *ureters*, and occasionally into the *kidneys*, raising the risk of infection.

void: To *urinate*, empty the *bladder*.

Wegener's granulomatosis (GRAN-yoo-LOH-muh-TOH-sis): An *autoimmune disease* that damages the blood vessels and causes disease in the lungs, upper respiratory tract, and *kidneys*.

National Kidney and Urologic Diseases Information Clearinghouse

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AND KIDNEY DISEASES

NIH Publication No. 03-4359
May 2003